Delta Operations for Salmonids and Sturgeon (DOSS) Group
Conference call: 12/17/13 at 9:00 a.m.

Objective: Provide advice to the Water Operations Management Team (WOMT) and National Marine Fisheries Service (NMFS) on measures to reduce adverse effects from Delta operations of the Central Valley Project and the State Water Project on salmonids and green sturgeon. DOSS will work with other technical teams. DOSS notes and advice can be found at: http://www.westcoast.fisheries.noaa.gov/central_valley/water_operations/doss.html.

Attendees

DWR: Mike Ford, Kevin Reece, Farida Islam, Andy Chu, Dan Yamanaka, James Gleim, Reza Shahcheraghi, Wenli Yin
FWS: Leigh Bartoo, Craig Anderson
NMFS: Barbara Rocco, Jeff Stuart, Barb Byrne, Garwin Yip, Bruce Oppenheim
Reclamation: Russ Yaworsky, Josh Israel
DFW: Chris McKibbin, Colin Purdy, Bob Fujimura, Krystal Acierto
SWRCB: Scott Ligare
EPA & USGS: not present

Agenda

1. Agenda review and introductions
2. Announcement: 2013 annual review panel report expected to be posted to Delta Stewardship Council website on Tuesday, 12/17: http://deltacouncil.ca.gov/science-event/9954
3. Fish monitoring
4. Current ops
5. Tracy Fish Facility secondary channel operations
6. Water quality & Delta Cross Channel operations
7. JPE timeline and options for IV.2.3 implementation if, as expected, final JPE not available by 1/1/14. (Use prelim JPE? Don't implement JPE-based trigger until have final JPE? Other options?)
8. Current and upcoming RPA actions
9. Smelt Working Group
10. DOSS advice?

Fish Monitoring: The following table presents fish monitoring data. Unless otherwise noted, reported sizes are fork length. See also: http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm.

Location	Chipps Is. Midwater Trawl	Sacramento Trawls	Mossdale Kodiak Trawl	GCID	Knights Landing RST	Tisdale RST	Beach Seines
Sample Date	12/11, 13	12/11, 13	12/11, 13	12/10–12*	12/10–15	12/10–16	12/10–13
Total Catch	**18**	**0**	**0**	**463**	**0**	**1**	**0**
FR				27			

WR				378		1 (79 mm)	
SR				8			
LFR				50			
Ad-Clipped Chinook	1 (300 mm)						
DS	4 (57–69 mm)						
Splittail	1						
Longfin	12						
SH (ad-clip)							
SH (wild)							
W. Temp. (avg. °F)	48.2	43.2	43.3	49.3	44.0	42.0	43.7
Flows (avg. cfs)					4,613	4,311	
Turbidity (avg. NTU)	41.8	10.0	6.0	1.9	4.8[1]	9.6	12.9
WR/LFR Avg. CPUE				6.5		0.009	
FR/SR Avg. CPUE							

CPUE = catch per unit of effort reported as the average fish/hour over reported sampling dates; ACT = acoustic tag; GCID = Glenn–Colusa Irrigation District; RST = rotary screw trap

[1]Note that FTU is used at Knight's Landing in place of NTU.

*The GCID rotary screw trap was removed from the GCID's bypass channel for repairs on 12/12. Trapping will not continue until further notice.

Glenn–Colusa Irrigation District (GCID): There appears to have been a spike in juvenile winter run coming through within the last week; this occurred in association with a several-degree drop in water temperature, although no causal link is confirmed.

> Action Item: Purdy (DFW) will check with GCID on whether data are available for assessing why there has been a recent spike in juvenile winter-run emigration.

Knights Landing & Tisdale: Although the sampling schedule for the next few weeks is not finalized, DFW expects that there might be a shutdown for a few days over the Christmas and New Year holidays to provide workers with time off.

Recent Hatchery Late-Fall-Run Releases: No individuals from the 11/1 release of late-fall-run Chinook from the Mokelumne hatchery or the 12/10 production release of late-fall-run Chinook from the Coleman National Fish Hatchery have been seen in sampling or salvage.

Fish Salvage: Fujimura (DFW) reported data from 12/9 through 12/15. No listed species or white sturgeon were salvaged at either facility. Preliminary results indicated that no listed species or white sturgeon were salvaged at either facility on 12/16.

On the Stanislaus River, 20 *Oncorhynchus mykiss* have passed upstream through the weir; thirteen were >16 inches and 5 (25%) were ad-clipped.

Operations (12/17/13)

SWP		**CVP**	
Exports (cfs)			
Clifton Court Forebay	2,000	Jones Pumping Plant	1,000

Reservoir Releases (cfs)			
Feather - Oroville	1,250	American - Nimbus	1,300 (reduction plans will be discussed on 12/19 at the B2IT and American River Team Group meetings)
		Sacramento - Keswick	3,750
		Stanislaus - Goodwin	200
Reservoir Storage (in TAF, % of capacity)			
San Luis (SWP)	249	San Luis (CVP)	304 (31)
Oroville	1,333	Shasta	1,686
New Melones		Folsom	211
Delta Operations			
DCC	Closed (on 12/1)	Sacramento River at Freeport (cfs)	8,323
Outflow Index (cfs)	4,400	San Joaquin River (cfs) at Vernalis	1,034
Total Delta Inflow (cfs)	9,846	OMR (daily) (cfs)	
Water Temperature (°F)		OMR 5-day avg (cfs)	
X2 (km)	>81	OMR 14-day avg (cfs)	
E/I (%)	29.5 (3-d avg)		

Water Quality (WQ): There was some minor degradation in WQ this past week; however, it was not of sufficient concern to open the Delta Cross Channel gates. Spring tides (which tend to worsen WQ) are occurring now; as we shift to the neap tides, WQ should begin to get better. Delta outflow and WQ are controlling exports.

Weather: The outlook for the next few weeks shows no changes in the current dry weather pattern.

Tracy Fish Collection Facility (Tracy) Secondary Channel Construction & Inspections: Oppenheim (NMFS) provided information on the necessary inspections in preparation for installation of new fish screens at Tracy, located in the southern Delta.

Tracy uses a louver-bypass system to intercept and guide fish into collection tanks (rather than into the Delta Mendota Canal), where they are held until they are transported by truck to a release site in the western Delta. Currently, cleaning the secondary louvers requires dewatering of the secondary channel. While the secondary channel is dewatered, no water flows through the bypass pipes between the primary and secondary channels, and because fish cannot enter the secondary channel, they cannot be salvaged. In response to a component of RPA Action IV.4.1 (Tracy Fish Collection Facility Improvements), Reclamation has proposed replacing the secondary louvers with travelling (self-cleaning) fish screens so that the secondary channel will no longer need to be dewatered for screen cleaning.

Installation of the new fish screens will require that Tracy be periodically shutdown (potentially lasting >2 hours), although export pumping is expected to continue during these shutdowns, for inspections before construction begins in April or May 2014. DOSS was asked to provide guidance on sampling protocols during these disruptions to the required salvage and sampling

process. Because there are likely to be listed species showing up within a few weeks, guidance for the periods of non-operation should be settled sooner rather than later.

Two questions were raised regarding the sampling protocols: 1) What is assumed about entrainment and loss during the disruption? and 2) Can these disruptions be accommodated within RPA Action IV.4.3, which calls for 30 minutes of sampling every 2 hours (25% of operational time)?

Some suggested using an average of the counts before and after the shutdown as an estimate of salvage during the shutdown, or limiting inspection time to no more than 1.5 hours at a time to allow for at least one 30-minute sampling period every 2 hours. It was suggested that the Tracy standard operating procedures (SOPs) with regard to fish sampling in the event of any shutdowns in facility operations be reviewed for possible extension to shutdowns of more than 2 hours.

Byrne (NMFS) asked Oppenheim to provide the SOPs for Tracy. She will then send a message to Brent Bridges at Tracy to ask that they propose a sampling structure for DOSS to review. DOSS will try to assess this before the end of the year.

RPA Actions:

- IV.1.1 (monitoring and alerts for DCC gate operations): No alerts tripped in the past week.
- IV.1.2 (DCC gate operations): No triggers exceeded in the past week.
- IV.3 (salvage and entrainment reduction): No triggers exceeded in the past week; this action will end 12/31.
- IV.2.3 (OMR flow management): This action begins 1/1/14.

Smelt Working Group (SWG): Data were distributed to participants on 12/16, but SWG did not meet. The Delta Conditions Team presented some modeling data on turbidity, which showed that turbidity has been overestimated. The current turbidity at all stations is below 5 NTUs; therefore, there is no immediate danger of approaching the 12-NTU action trigger. It was also noted that longfin smelt might have begun to spawn. Previous SWG meeting notes are available at: http://www.fws.gov/sfbaydelta/cvp-swp/smelt_working_group.cfm.

Winter-Run JPE Timeline and Options for Implementation of the JPE-Based Fish Density Trigger in RPA Action IV.2.3: Purdy (DFW) reported that the official winter-run escapement estimate from DFW should be out within the next week; however, Byrne noted that NMFS did not expect to have all other components used to calculate the JPE. Because it is unlikely that NMFS will have issued a final JPE by 1/1/14, can DOSS provide feedback on what to do in the interim? The following options were discussed:

- use a preliminary JPE and JPE-based fish-density trigger calculated using new estimates for some components (*e.g.*, for in-river survival);
- use a preliminary JPE and JPE-based fish-density trigger calculated using the estimates of components to calculate last year's JPE; or
- do not implement the JPE-based fish-density trigger until there's a final JPE.

Last year, DOSS used a preliminary JPE-based trigger of 5.35 fish/TAF. Because the final values of the various JPE components were very close to the preliminary estimates of those

components (not necessarily the case in all years), the actual final JPE was 5.33 fish/TAF. Some preliminary calculations were done estimating the value of the JPE-based fish-density trigger (first stage) as follows:

Adult escapement	In-river survival	Other components (fecundity, sex ratio, etc.)	JPE-based trigger (first stage)
Preliminary estimate for 2013 (~6,000)	Last year's estimate (~54%)	Used last year's estimate	~11 fish/TAF
Preliminary estimate for 2013 (~6,000)	high-end estimate from data being considered by WR PWT (~43%)	Used last year's estimate	~9 fish/TAF
Preliminary estimate for 2013 (~6,000)	low-end estimate from data being considered by WR PWT (~15%)	Used last year's estimate	~3 fish/TAF

JPE = juvenile production estimate; WR PWT = Winter-run Project Work Team

Reece (DWR) commented that the subgroup is still discussing these percentages, as well as waiting for NMFS to clarify where in the Delta the JPE begins. The other older juvenile Chinook salmon default trigger in Action IV.2.3 is 8 fish/TAF. It was also noted that it might not be critical to have a new JPE-based fish-density trigger immediately because if the JPE trigger is >8 fish/TAF, the 8 fish/TAF will be the lower trigger and would still be controlling.

Based on the discussion, DOSS members agreed to provide the following advice to NMFS and WOMT regarding the protocols used for Action IV.2.3 until the final JPE is provided to NMFS.

DOSS Advice to WOMT and NMFS:

Background:

Action IV.2.3, OMR flow management, requires OMR flows to be less negative than -5,000 cfs when certain triggers are exceeded. One of the triggers is based on the winter-run Chinook salmon JPE. NMFS does not expect to have a final JPE by 1/1/14, and DOSS was asked for feedback on whether to implement Action IV.2.3 (a) using a trigger value based on a preliminary JPE estimate, or (b) using the remaining triggers that do not depend on the JPE.

Advice:

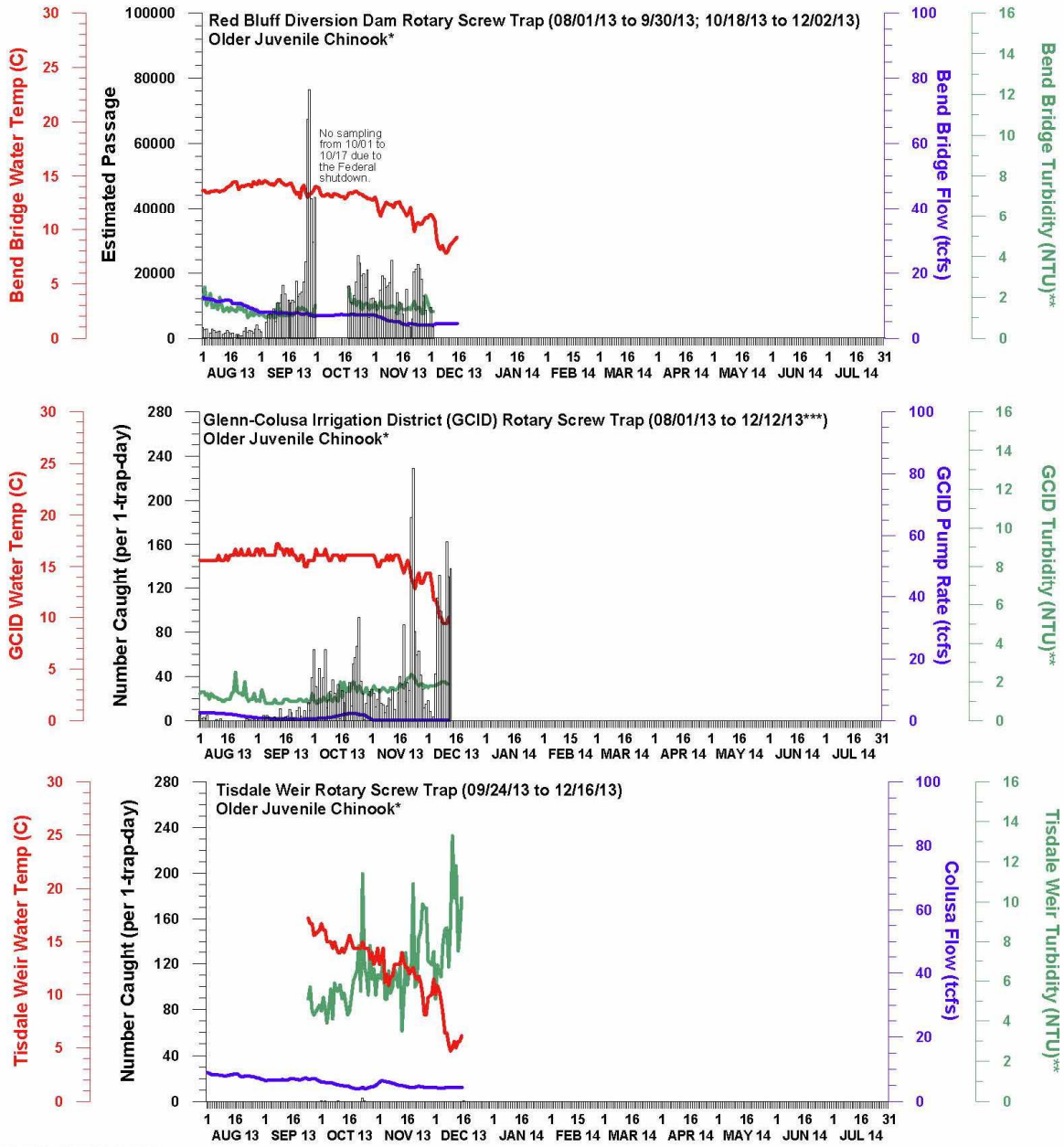
DOSS advises that, until NMFS issues the final winter-run Chinook salmon JPE and associated JPE-based fish-density trigger, Action IV.2.3 be implemented using the triggers that do not depend on the JPE.

Holiday Schedule: No DOSS meetings are scheduled for the next 2 weeks; however, any DOSS participant may call for a meeting if data on fish or WQ require discussion by DOSS. Fish monitoring data will be distributed to DOSS participants as usual. The Delta operations data are provided at: http://www.water.ca.gov/swp/operationscontrol/docs/delta/deltaops.pdf

Next Meeting: The next DOSS conference call will be on 1/7/14 at 9:00 a.m.

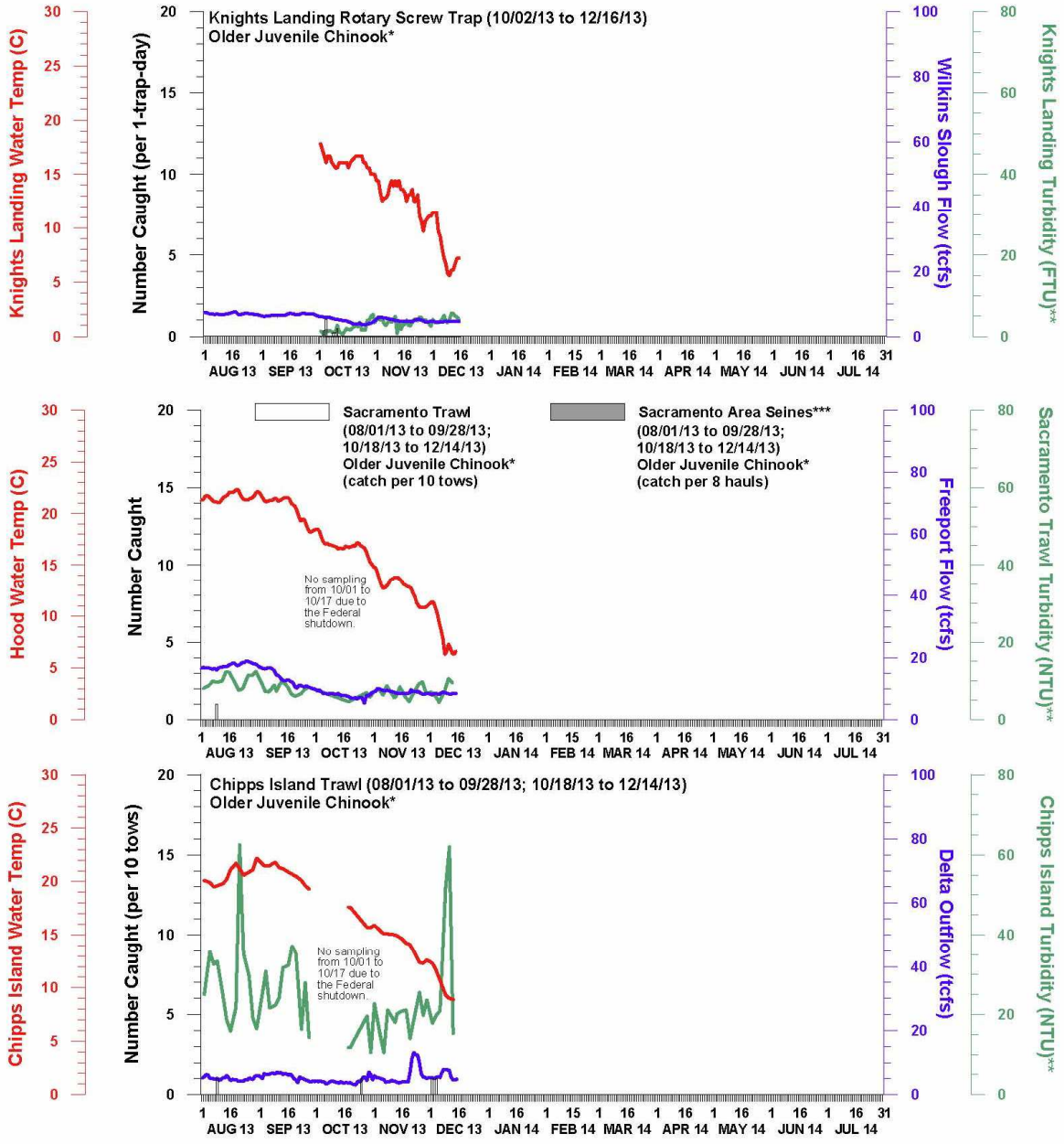
Below are graphs provided by DWR for Chinook salmon and steelhead observed at monitoring locations in the Sacramento and San Joaquin rivers and Delta. For additional graphs, please visit the DWR website at:
http://www.water.ca.gov/swp/operationscontrol/calfed/calfedmonitoring.cfm.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE SACRAMENTO RIVER



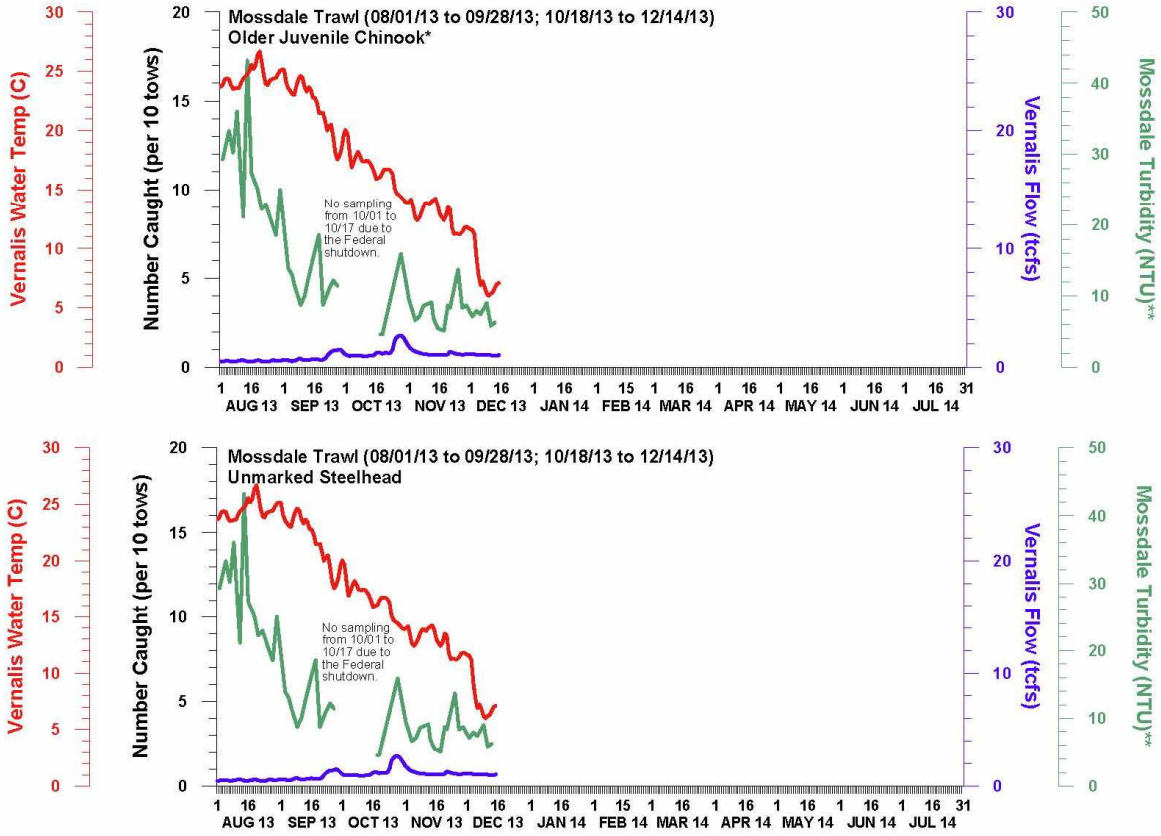
DWR-DES 16 DEC 2013
Preliminary data from DFW, FWS, GCID, and CDEC; subject to revision.
*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for which a race is assigned on a given sampling date.
**Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured.
***GCID: Five older juveniles caught on 9/25, 9 older juveniles caught on 9/27, 57 older juveniles caught on 10/5 and 23 older juveniles caught on 11/14. However, catch could not be standardized to 1-trap day since hours fished could not be calculated due to problems with the revolution counter. As a result, data are not presented on the graph. The GCID rotary screw trap was removed on Dec 12,2013 for repairs and trapping will not continue until further notice.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK MEASURED IN THE LOWER SACRAMENTO RIVER AND CHIPPS ISLAND



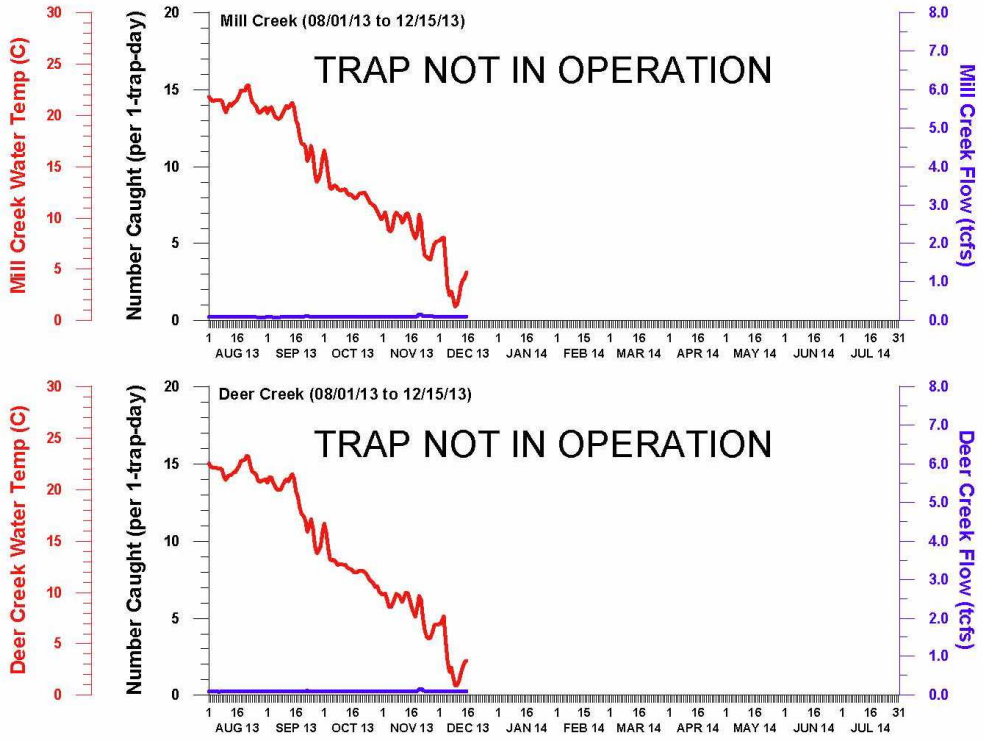
DWR-DES 14 DEC 2013
Preliminary data from DFW, FWS, and CDEC; subject to revision.
*Older Juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher Model) for which a race is assigned on a given sampling date.
**Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured. Knights Landing turbidity measured in FTU, which should be roughly equivalent to NTU.
***Sacramento area seine route consists of the following seine sites: Verona, Elkhorn, Sand Cove, Discovery Park, American River, Miller Park, Sherwood Harbor, and Garcia Bend. Bars are stacked if Chinook caught from the trawl and seines are from the same day.

NUMBER OF UNMARKED OLDER JUVENILE CHINOOK AND STEELHEAD MEASURED IN THE SAN JOAQUIN RIVER



DWR-DES 14 DEC 2013
Preliminary data from FWS and CDEC; subject to revision.
*Older juvenile Chinook defined as all Chinook greater than or equal to the minimum winter run length-at-date criteria and less than the maximum size included in the length-at-date criteria (Frank Fisher model) for which a race is assigned on a given sampling date.
**Turbidity is a discrete measurement and is not measured continuously. Therefore, data are interpolated on days when turbidity was not measured.

WATER TEMPERATURE AND FLOW MEASURED AT MILL AND DEER CREEK



DWR-DES 16 DEC 2013
Preliminary data from CDEC; subject to revision.